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ABSTRACT

Two studies were conducted to examine relationships between intransitivity, defined by the total circular triad (TCT) score on the Minnesota Importance Questionnaire (MIQ), and vocational needs and abilities. Data were collected on 373 rehabilitation clients for Study 1 and 215 vocational assessment clients for Study 2. In Study 1, TCT scores were correlated with General Aptitude Test Battery (GATB) scores, and a multiple regression analysis was performed with GATB and MIQ scores as independent variables and TCT as the dependent variable. The results showed that aptitude scores, especially General and Verbal scores, were negatively related to TCT scores, while needs for Social Status and Authority were positively related to TCT scores. In Study 2, Goodstein's model of indecision and indecisiveness in vocational decision-making was investigated by comparing number of important needs for high TCT subjects who were above, versus below, the median in work experience, and by a multiple regression analysis with number of important needs as the dependent variable and age, education, work experience, and TCT scores as independent variables. The data indicated that undecided and indecisive subjects cannot be separated on the MIQ and that the number of needs declared important decreased with education but increased with amount of work experience and TCT score. (Author)

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# Intransitivity and Vocational Needs

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## Intransitivity and Vocational Needs

As vocational needs increasingly gain deserved attention in counseling, the problem of client inconsistency in the measurement of vocational needs becomes more critical. It is this problem of inconsistency that is the focus of this report.

A conceptualization of needs that is appropriate to the vocational setting views needs as preferences of individuals for work reinforcers. Using this definition of vocational needs, the Minnesota Importance Questionnaire (MIQ; Gay, Weiss, Hendel, Dawis, & Lofquist, 1971), a paired-comparison instrument, was developed to measure preferences for 20 work reinforcers. An index of inconsistency is derived for the MIQ from the data on response intransitivity.

Intransitivity refers to the logical inconsistency of an individual's preferences. Suppose a person were exposed to pairings of three stimuli (A, B, C) and asked to indicate the stimulus preferred in each pair. If A were preferred to B in the first pairing, and B to C in the second, then A should be preferred to C in the third pairing to maintain a transitive relationship. Preference of C over A would be the illogical or intransitive response.

In the MIQ, the operational measure of intransitivity is the total circular triad (TCT) score. A high TCT score indicates a large number of intransitive responses.

The present investigation was designed to explore some of the psychological implications of intransitivity as operationalized by the TCT score. Two separate but related studies were carried out.

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Study 1

Previous research studies (Davis, 1957; Saunders, 1954) have reported a negative relationship between general intelligence and intransitivity. However, further investigation of the relationship between intransitivity and specific abilities is needed. Since research (Kahan & Poitou, 1973; DeSoto & Albrecht, 1968) suggested that transitive responding involves the internal construction of a logical, linear ordering of the stimuli, it is hypothesized that a strong negative relationship would be found between intransitivity and mathematical or spatial abilities. In addition, research indicating a negative association between intransitivity and nonconventional, creative thinking patterns, suggests the hypothesis that a positive relationship exists between intransitivity and clerical abilities.

Study 2

The focus in Study 2 was the relationship between intransitivity and indecision or indecisiveness as elaborated in Goodstein's (1965) model of vocational decision making. Goodstein asserted that career indecision is the result of insufficient opportunity to acquire adequate information or responses, while indecisiveness results when there has been sufficient opportunity to acquire information but making a decision is anxiety-arousing so that no decision is made.

One type of adaptive response would be to develop a vocational need hierarchy. Individuals who have had little work experience would have had small opportunity to learn which needs are satisfied through work. Being unfamiliar with work reinforcers, they might be confused about the nature and relative importance of various needs. Consequently, they would be expected to have high TCT scores and a small number of important needs (indexed as an IN score) on the MIQ.

Individuals who may have had work experience but who avoid decision making would also manifest high TCT scores. However, they would be expected to have many important needs (i.e., high rather than low IN scores) for they would tend to avoid deciding which needs were most important.

## Method

### Subjects

The subjects in Study 1 were 373 clients of the Minnesota State Division of Vocational Rehabilitation and in Study 2, 215 clients of the Vocational Assessment Clinic at the University of Minnesota.

### Instruments

1. Previous work experience was determined by a biographical data sheet. The relevant items were number, type, and length of previous jobs.

2. The 1967 form of the MIQ (Gay, et al., 1971) was used. This version presents the 20 need statements in a complete paired-comparison format. The last part of the instrument requires an absolute judgment (yes-no) of the importance of each vocational need.

3. Abilities were measured by the General Aptitude Test Battery (GATB; U.S. Department of Labor, 1970), a measure of nine vocational abilities.

### Procedure and Results

Study 1. The Pearson product moment correlation was computed between TCT score and each of the nine GATB scores. As Table 1 shows, a significant, negative correlation was found for each aptitude, with Verbal Aptitude having the largest negative correlation with TCT, and the dexterity aptitudes the smallest.

To determine the relative importance of specific needs and abilities for predicting intransitivity, a step-wise multiple regression analysis

was performed, with TCT as the dependent variable and the nine GATB scores and 20 MIQ scores as the independent variables. This was done for two samples of N = 186 each, and for the total sample. Table 2 shows the independent variables that ranked in the first five for the three different analyses. Among these variables were Social Status and Authority from the MIQ, and General or Verbal Aptitude from the GATB. Social Status and Authority correlated positively with TCT; Verbal Aptitude and Ability Utilization negatively. Multiple R's for the first five variables were .422 (Sample A) and .548 (Sample B). Both multiple R's increased to a maximum of .62 with all independent variables included.

Study 2. A step-wise multiple regression analysis was performed with number of important needs as the dependent variable, and age, education, work experience, and TCT score as independent variables. The two measures of a number of important needs were (a) the number of needs indicated as important in the absolute judgment section of the MIQ and (b) the number of scale scores greater than 0.0. Work experience was measured as number of different jobs (separate DOT codes), number of jobs in the last five years, and amount of time either in the last five years or since the first job.

Because the total sample available (N = 215) was not large enough to divide into two samples for replication purposes, construct validity was ascertained by comparing results when the different measures of the same generic variable were employed. For both measures of the dependent variable, education, TCT, and work experience (measured by time worked) accounted for the largest proportion of variance. The beta weights are given in Table 3. Amount of work and TCT correlated positively with number of important needs while education correlated negatively.

A t-test comparing number of important needs for subjects above the median work experience with those for subjects below the median, was performed for subjects with high TCTs (above the median TCT score). The resulting values were not significant for either measure of important needs ($t$ = .42, .43, $df$ = 100, $p$ = .67).

## Conclusions

### Study 1

1. The hypothesis of the primary importance of mathematical and spatial abilities was not supported.

2. Clients with higher aptitude scores, particularly general or verbal aptitudes, are less likely to demonstrate intransitivity on the MIQ.

3. Individuals with high needs for Social Status and Authority are most likely to respond in an intransitive fashion.

### Study 2

1. Using the variables described here, Goodstein's "undecided" and "indecisive" clients cannot be separated on the MIQ.

2. As TCT scores increase, the number of important needs tends to increase.

3. The number of important needs decreases with education but increases with amount of work experience. The latter finding is in line with the results of previous research (Gay & Weiss, 1970).

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Table 1

Pearson Product Moment Correlations

Between TCT Scores and GATB Scores

| GATB Scale | Total Sample | | Sample A | | Sample B | |
|---|---|---|---|---|---|---|
| | r | p | r | p | r | p |
| General | -.25 | .001 | -.36 | .001 | -.15 | .022 |
| Verbal | -.29 | .001 | -.33 | .001 | -.26 | .001 |
| Numerical | -.21 | .001 | -.28 | .001 | -.14 | .025 |
| Spatial | -.14 | .003 | -.28 | .001 | -.03 | .351 |
| Form Perception | -.22 | .001 | -.26 | .001 | -.17 | .010 |
| Clerical Perception | -.19 | .001 | -.21 | .002 | -.18 | .007 |
| Motor Coordination | -.13 | .005 | -.26 | .001 | -.02 | .376 |
| Finger Dexterity | -.15 | .002 | -.15 | .025 | -.16 | .019 |
| Manual Dexterity | -.14 | .003 | -.12 | .061 | -.17 | .013 |

Note. For Total Sample, N = 373; for samples A and B, N = 186.

Table 2

Beta Weights for the Five Highest Ranking MIQ or GATB Scales in Multiple Regression on TCT Score

| MIQ/GATB Scale | Beta Weights: Total Sample (N = 373) | | Sample A (N = 186) | | Sample B (N = 186) | |
|---|---|---|---|---|---|---|
| Social Status | .241 | (1) | .256 | (1) | .278 | (3) |
| Verbal Aptitude | -.345 | (2) | -.566 | (2) | ---- | |
| Authority | .260 | (3) | .230 | (4) | .334 | (2) |
| Ability Utilization | -.124 | (4) | ---- | | -.240 | (4) |
| Activity | .177 | (5) | ---- | | .187 | (5) |
| General Aptitude | ---- | | .499 | (5) | -.013 | (1) |
| Security | ---- | | -.121 | (3) | ---- | |

Note. Number in parentheses indicates scale rank for given sample.

Table 3

Beta Weights for the Three Highest Ranking Independent Variables in Multiple Regression on Number of Important Needs

| Variable | Number of Important Needs: Absolute judgment | | Scale score > 0.0 | |
|---|---|---|---|---|
| Education | -.178 | (1) | -.153 | (2) |
| TCT | .114 | (2) | .236 | (1) |
| Work Experience | .126 | (3) | .039 | (3) |

Note. Number in parentheses indicates variable rank; N = 215.